



**INSTITUTE FOR DEVELOPMENT RESEARCH ADVOCACY
AND APPLIED CARE**

IDRAAC Reg. No. 4023/AD/1997 - P.O.Box: 166227 Achrafieh BEIRUT-LEBANON 1100 2110
Tel & Fax: 961-1-587190 /-449499 /-564529 - e.mail: idraac@idraac.org

**THE TOVA ®
TEST OF VARIABLES OF ATTENTION
BY LAWRENCE M. GREENBERG**

Name: [Redacted]
Date of Birth: [Redacted] 2008
Date of Test: April 25, 2023
Age: 14 years
Version Used: Auditory version
Medication: None

Behavioral Observations: [Redacted] was concentrating all along the test administration

[Redacted]'s results indicate the following:
1) An inconsistency in the variability of his attention
2) A slow response style
3) A high level of impulsivity
4) A high level of distractibility

Remarks:

The Global profile is considered impaired. These results, in addition to the information that were collected during the clinical assessment are in favor of the presence of an Attention Deficit and Hyperactivity Disorder.

Younana Cassir Haddad D.E.S.S.
Child and Adolescent
Psychologist



The Test Of Variables of Attention (T.O.V.A.®)

The **Test of Variables of Attention (T.O.V.A.)** is a state-of-the-art continuous performance test that provides objective measurements of attention and inhibitory control for children and adults (ages 4 - 80+). It augments subjective measures (e.g., behavior ratings and history) and provides a more comprehensive picture of attention and inhibitory control.



The T.O.V.A. continuously measures performance during a 10.8-minute task or a 21.6-minute task, depending on age. It records speed, accuracy, and consistency of responses to a series of squares (in the visual T.O.V.A. test) or tones (in the auditory T.O.V.A. test) that are presented in two-second intervals. These measurements (accurate to ± 1 ms) are then compared by age and gender to a large normative sample (a sample of people without attention problems). This comparison determines whether the test results are "within normal limits" or not. The T.O.V.A. also compares results to a group of people independently diagnosed with ADHD. The T.O.V.A. report is based on these two comparisons, as well as performance, session, and response validity measures.



If you have questions about this report, please contact the person who provided it to you. For more information about attention and the T.O.V.A., please visit our website at <https://www.tovatest.com/>. To contact us please email info@tovatest.com or call 800.PAY.ATTN (562.594.7700).



Summary

ID: 520 [REDACTED] (2008)
Male - 14y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Apr 25, 2023 at 11:09 AM

Session and Response Validity

CAUTION: There are important response validity issues that affect the interpretation of this test. Please see the Validity section of the Interpretation Notes page.

T.O.V.A. Interpretation

The results of this T.O.V.A. are not within normal limits, and may be suggestive of a possible attention deficit, including ADHD. Please see the Interpretation Notes page for important information about this report.

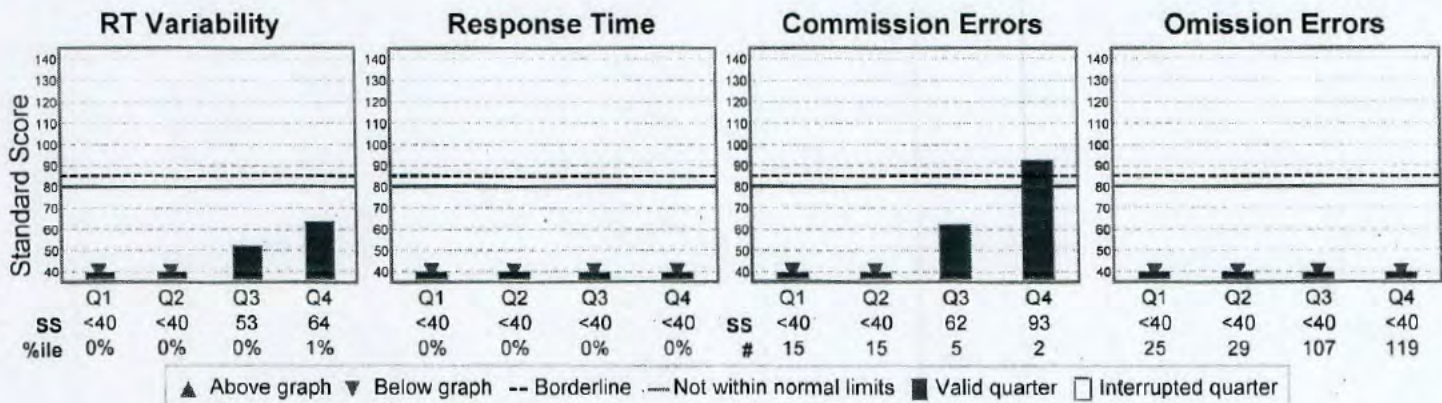
Treatment

No treatments entered.

Comparison to the Normative Sample

These scores compare this subject's performance to the performance of individuals of the same gender and age in the T.O.V.A. Normative Sample, a study of individuals who did not have attention problems.

Results are reported as standard scores (average = 100 with a standard deviation of 15) and are compared to a large normative sample stratified by gender and age. Scores above 85 are within normal limits, 80-85 are borderline, and below 80 are not within normal limits. See the Interpretation Notes page and the Analyzed Data page for more detailed information on these variables and on the subject's performance.





Interpretation Notes

ID: 520 L U [REDACTED] 2008)
Male - 14y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
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Session and Response Validity

Response Validity

These results must be interpreted with caution because of the unusual lack of correct responses (less than 25%) in Q2, Q3, Q4. This lack of correct responses will yield unreliable standard scores in the response time variables: response time variability standard scores will be artificially high, and response time standard scores are unpredictably affected.

Notes on the Comparison to the Normative Sample

Variability is a precise measure of variations in correct response times, and measures the consistency of response times. **Variability was not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Response Time is the average speed of correct responses to targets, and is a measure of information processing speed. **Response Time was not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Commission Errors occur when the subject incorrectly responds to a nontarget, and are a measure of inhibitory control. **Commission Errors were not within normal limits in Quarters 1, 2, and 3, Half 1 and 2, and Total.**

Omission Errors occur when the subject does not respond to a target, and are a measure of sustained attention. **Omission Errors were not within normal limits in Quarters 1, 2, 3, and 4, Half 1 and 2, and Total.**

Response Patterns

In Q2, Q3, Q4, there were 15 episodes in which three or more omission errors occurred in a row. Usually, Omission Errors tend to be scattered throughout the test, rather than clustered together. Assuming compliance with test instructions, this unusual pattern of performance may be caused by a significant external distraction, severe distractibility, falling asleep (e.g., narcolepsy), the occurrence of seizure(s), or other causes (poor effort, fatigue, etc.).

Other Notes

Consider administering a Visual T.O.V.A. to this subject for a more comprehensive assessment of attention. This is important because an individual can have markedly different results on one test versus the other.



Analyzed Data

ID: 520 L U (Aug 19, 2008)
Male - 14y

Auditory T.O.V.A. (v8.3-447 sn20542)
Apr 25, 2023 at 11:09 AM

Treatment

No treatments entered.

Comparison to the Normative Sample

Results below are reported as standard scores (average standard = 100; standard deviation = 15). Scores indicate deviation from the performance of a large normative sample stratified by gender and age. Standard scores above 85 are considered to be in the normal range, scores between 85 and 80 are considered borderline, and scores below 80 are considered not within normal limits. Scores less than 70 are considered significantly below normal range. Standard scores less than 40 are more than 4 standard deviations from normal and are denoted as "<40". Quarters, Halves and Totals are independently calculated and are not averages.

	Quarter				Half		Total
	1	2	3	4	1	2	
RT Variability	<40	<40	53	64	<40	57	48
Response Time	<40	<40	<40	<40	<40	<40	<40
Commission Errors	<40	<40	62	93	<40	74	<40
Omission Errors	<40	<40	<40	<40	<40	<40	<40
	Infrequent		Frequent				

Key: Borderline, Not within normal limits, Invalid



Tabulated Data

ID: 520 L U (2008)
Male - 14y

Auditory T.O.V.A. (v8.3-447 sn20542)
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This page contains tabulated raw data and documents T.O.V.A. session parameters.

		Quarter				Half		Total
		1	2	3	4	1	2	
RT Variability	ms	289	377	352	323	326	346	363
Response Time	ms	1343	1346	1049	1141	1344	1076	1191
Post-commission responses	#	1	1	0	1	2	1	3
Response Time	ms	1037	1266	0	533	1151	533	945
Variability	ms	0	0	0	0	115	0	306
Commission Errors	#	15/126	15/126	5/36	2/36	30/252	7/72	37/324
Percentage	%	11.9	11.9	13.9	5.6	11.9	9.7	11.4
Response Time	ms	735	865	1221	986	800	1154	867
Omission Errors	#	25/36	29/36	107/126	119/126	54/72	226/252	280/324
Percentage	%	69.4	80.6	84.9	94.4	75	89.7	86.4
D Prime		0.67	0.32	0.05	0	0.51	0.03	0.11
Standard Score		<40	<40	46	48	<40	45	<40
Beta		1.76	1.38	1.06	1	1.6	1.04	1.13
Anticipatory	%	0.6	0.6	1.2	0	0.6	0.6	0.6
To Nontargets	#	1	1	0	0	2	0	2
To Targets	#	0	0	2	0	0	2	2
Multiple Responses	#	0	0	0	0	0	0	0
Total Correct	#	121/162	117/162	48/162	41/162	238/324	89/324	327/648
Correct Responses	#	11/36	7/36	17/126	7/126	18/72	24/252	42/324
Correct Nonresponses	#	110/126	110/126	31/36	34/36	220/252	65/72	285/324
Skew	ms	253	359	-132	55	265	72	249
User Interrupts	#	0	0	0	0	0	0	0
Hardware errors	#	0	0	0	0	0	0	0
		Infrequent		Frequent				

Session parameters

Format: 1 (standard)
ISI: 2000 ms
Stimulus On Time: 200 ms
Stimulus Off Time: 300 ms
Anticipatory Cutoff: 150 ms

Hardware information

Session mode: EAV
USB device: HW 5, BD 0, FW 1.1-219-gd36f0e2
Microswitch: HW 3, BD 0, FW 9

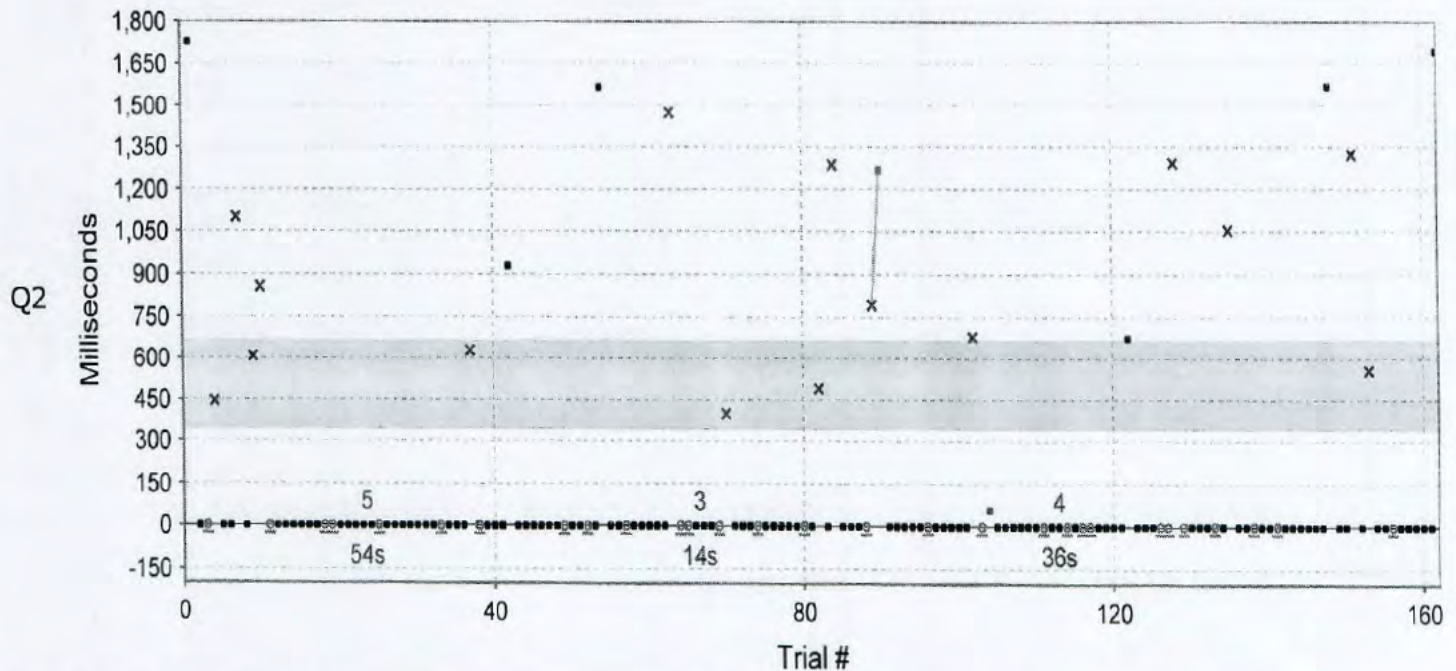
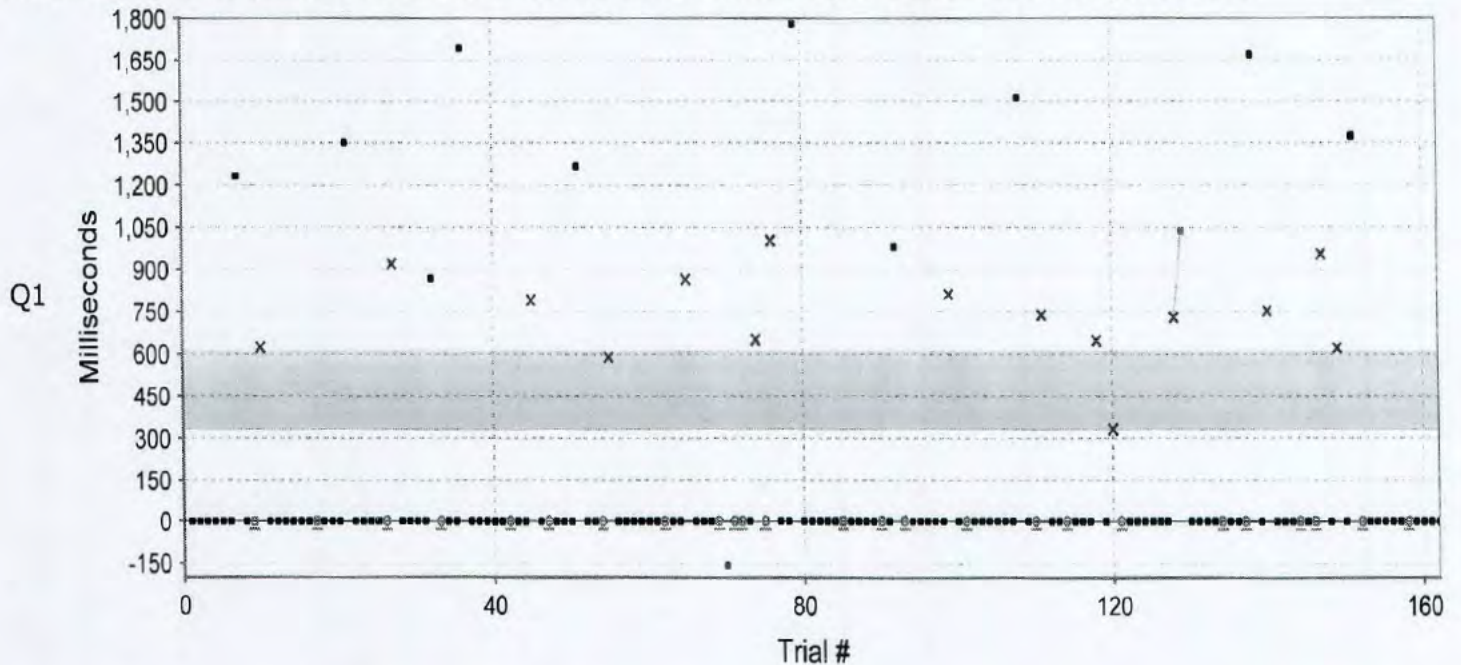


Raw Data Graphs

ID: 520 U [REDACTED] (2008)
Male - 14y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Apr 25, 2023 at 11:09 AM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



• Correct response • Correct non-response × Commission error ◯ Omission error • Anticipatory response
 • Post-commission error correct response / Slower post-commission RT \ Faster post-commission RT
 ▲▲ Off-scale resp./error ■ Normative range | Interruption 3 10s Response gap (# Targets and Sec)

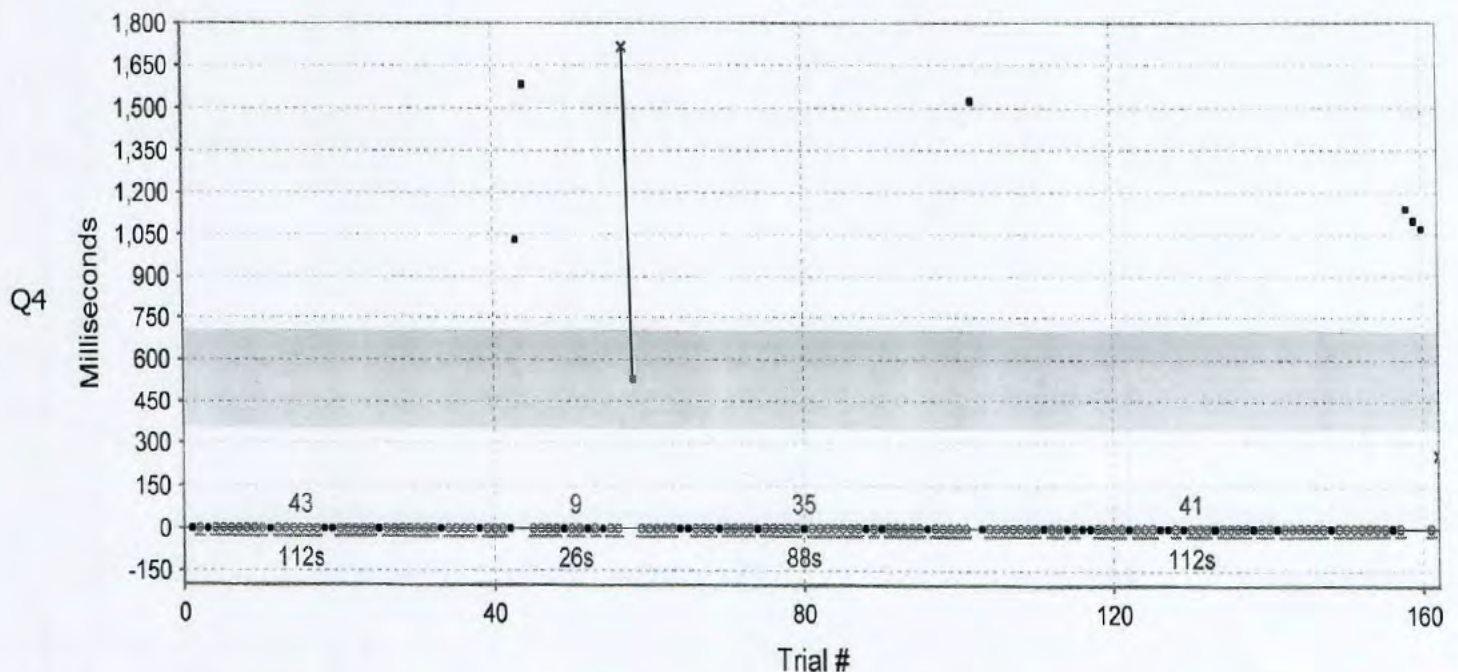
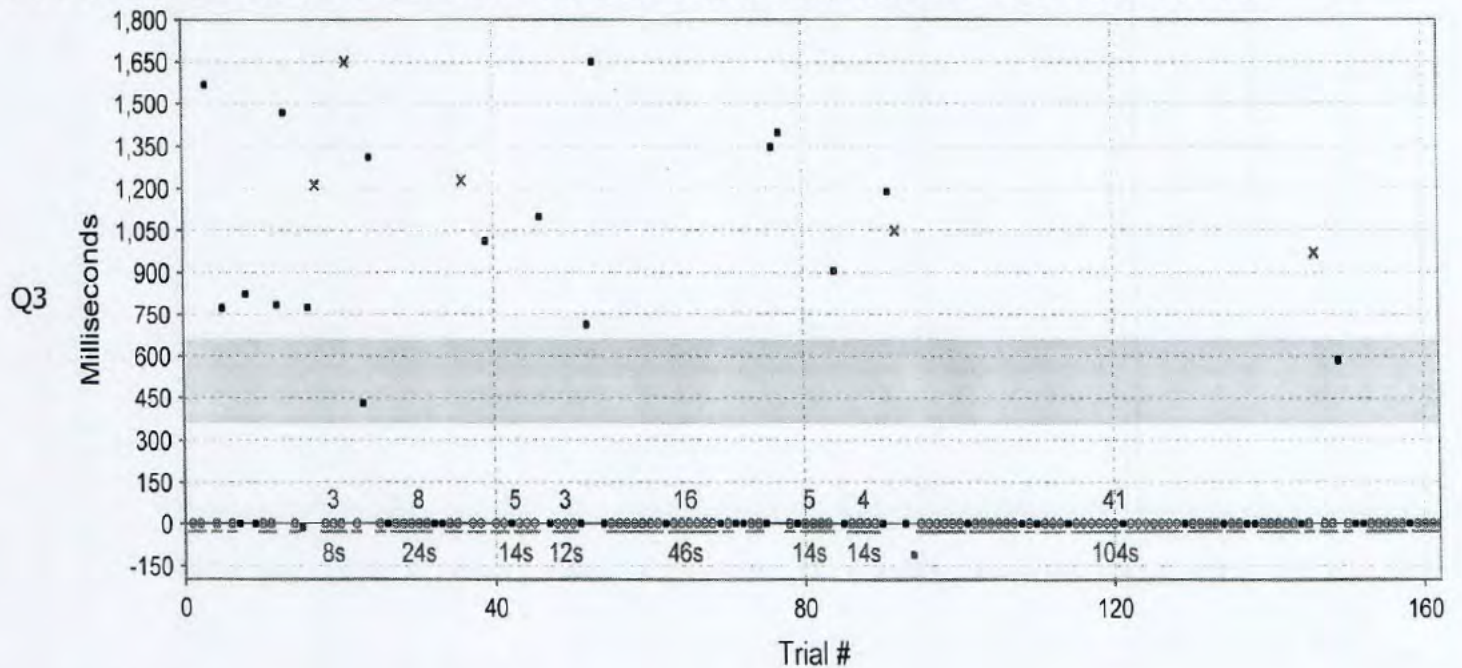


Raw Data Graphs (continued)

ID: 520 U [REDACTED] ([REDACTED] 2008)
Male - 14y [REDACTED]

Auditory T.O.V.A. (v8.3-447 sn20542)
Apr 25, 2023 at 11:09 AM

This page graphically displays the subject's responses. Black squares mark correct responses and correct nonresponses. Red 'X's mark commission errors, red squares mark anticipatory responses, and underlined red circles mark omission errors. The light gray region represents the normative range of responses. Commission errors followed by a correct response are linked by a line: an upward slope (light gray) indicates slowing down following an error (typical), and a downward slope (black) indicates speeding up after making an error (unusual). Red numbers above the zero line indicate the number of missed targets (if three or more in a row), and the red number below the zero line indicates the number of seconds elapsed between correct target responses.



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▲▲ Off-scale resp./error ■ Normative range | Interruption 3 10s Response gap (# Targets and Sec)



Raw Data Tables

ID: 520 L U (Aug 19, 2008)
Male - 14y

Auditory T.O.V.A. (v8.3-447 sn20542)
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This page shows a trial-by-trial view of T.O.V.A. test data. Each entry in the table indicates the stimulus type (target or nontarget) and the subject's response to that stimulus. Error responses are shown in red, and response times are in milliseconds. A negative response time indicates a response that was made before the stimulus was presented.

1-27	28-54	55-81	82-108	109-135	136-162	163-189	190-216	217-243	244-270	271-297	298-324
N	N	C 588	N	N	N	T 1729	N	N	C 489	N	N
N	N	N	N	O	O	N	N	N	N	N	N
N	N	N	N	C 736	T 1669	O	N	O	C 1284	O	O
N	N	N	O	N	N	C 443	N	N	N	N	N
N	T 870	N	N	N	C 751	N	N	N	N	N	N
N	O	N	N	O	N	N	O	N	N	O	O
T 1233	N	N	N	N	N	C 1100	N	N	O	N	N
N	N	O	N	N	N	N	N	C 793	O	N	N
O	T 1694	N	O	N	O	C 607	N	C 1472	T 1266	O	N
C 623	N	N	N	C 647	N	C 856	C 627	O	N	N	N
N	N	C 866	T 980	N	O	O	O	O	N	N	N
N	N	N	O	C 333	N	N	N	N	N	N	N
N	N	N	N	O	N	N	N	N	N	N	N
N	N	N	N	N	C 622	N	N	N	N	T 672	N
N	O	O	N	N	N	N	N	O	N	N	N
N	N	NA -155	N	N	T 1374	N	T 929	O	N	N	C 1321
O	N	O	N	N	O	N	N	N	N	N	N
N	C 791	O	C 813	N	N	N	N	N	N	O	C 555
N	N	N	N	N	N	O	N	N	N	N	N
N	O	C 649	O	C 728	N	N	N	O	N	C 1291	N
T 1350	N	O	N	T 1036	N	N	N	C 676	O	O	O
N	N	C 1001	N	N	N	N	O	O	N	N	N
N	N	N	N	N	O	N	N	NA 57	N	N	N
N	T 1268	N	N	N	N	N	N	N	N	N	N
N	N	T 1780	N	N	N	O	O	N	N	O	N
O	N	N	N	O	N	N	N	O	N	N	N
C 920	O	N	T 1513	N	N	N	T 1564	N	N	C 1054	T 1691

325-351	352-378	379-405	406-432	433-459	460-486	487-513	514-540	541-567	568-594	595-621	622-648
O	O	O	O	O	O	N	O	O	O	O	O
O	O	O	O	N	N	O	O	O	O	O	O
T 1568	O	O	T 905	O	N	N	O	C 1714	O	N	N
O	O	O	N	O	O	O	O	T 533	O	O	O
T 774	N	O	O	O	O	O	O	O	O	O	O
O	N	O	O	N	O	O	N	O	O	N	N
N	O	O	O	O	O	O	O	O	N	O	O
T 823	O	N	O	O	O	O	O	O	O	N	O
N	C 1228	O	N	O	N	O	O	O	N	N	O
O	O	O	T 1187	O	O	O	O	N	O	O	O
O	O	O	C 1047	O	C 968	N	N	N	O	O	O
T 784	T 1010	O	N	O	O	O	O	O	O	O	O
T 1465	O	O	TA -110	N	O	O	O	O	O	O	N
O	O	O	O	O	T 587	O	O	O	O	N	O
TA -14	N	N	O	O	O	O	N	N	N	O	O
T 776	O	O	O	O	N	O	T 1032	O	O	O	O
C 1212	O	N	O	O	N	O	T 1582	O	O	O	O
O	O	N	O	O	O	N	O	O	O	N	O
O	T 1099	O	O	O	O	O	O	O	O	N	O
O	N	O	N	O	O	O	O	N	O	O	O
C 1650	O	N	O	N	O	O	O	O	T 1524	N	N
O	O	T 1345	O	O	O	O	N	O	N	O	O
T 431	O	T 1396	O	O	N	O	O	O	O	O	T 1142
T 1310	N	O	O	O	O	O	O	O	O	O	T 1100
O	T 712	N	O	O	O	N	O	O	O	N	T 1070
N	T 1651	O	O	N	O	O	N	O	O	O	O
O	N	O	N	O	O	O	N	O	O	O	C 256

T = Correct response to target

O = Omission error

A = Anticipatory response

N = Correct nonresponse to nontarget

C = Commission error

M = Multiple response

Green = Post-Commission-error correct response

U = User interrupt

H = Hardware interrupt